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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/553,220	04/20/2000	ZINE-EDDINE BOUTAGHOU	169.12-0433	5021

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EXAMINER

CASTRO, ANGEL A

ART UNIT PAPER NUMBER

2653

DATE MAILED: 03/24/2004

20

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/553,220

Applicant(s)

BOUTAGHOU ET AL.

Examiner

Angel A Castro

Art Unit

2653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1 is/are allowed.
- 6) ☒ Claim(s) 2,6-8,12 and 13 is/are rejected.
- 7) ☒ Claim(s) 4-5, 9-11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is in response to Amendment E filed 12/11/03.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-2, 6-8 and 12-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Kant et al (U.S. Pat. 6,215,629).

The applied reference has a common Assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

Regarding claim 1, Kant discloses a microactuation system comprising:

a load beam having a stationary region 18 and a moving region 66,

means 52, 54 for flexibly coupling the stationary region of the load beam to the moving region of the load beam; and

means 62, 64 for selectively altering a position of the slider 24 with respect to the rotatable disc 30, the means for selectively altering mounted to the means for flexibly coupling and the means for selectively altering extending from a distal end of the stationary region to a proximal end of the moving region generally along a longitudinal centerline of the stationary region.

Regarding claim 2, Kant et al discloses a microactuation system comprising:

a load beam 18 having a first section 78;

a flexure 66 for supporting a slider 24 carrying a transducing head;

a bending motor 62, 64 attached between the first section of the load beam and the flexure 66, the bending motor being deformable in response to a control signal applied thereto; and

a flexible beam 52, 54 connected between the first section of the load beam and the flexure wherein the bending motor is attached to the flexible beam.

Regarding claim 6, Kant et al shows that the load beam has a second section 76 connected to the flexure (figure 3), and further wherein the flexible beam is connected between the first section and the second section of the load beam.

Regarding claim 7, Kant et al shows that the bending motor comprises:

a bottom electrode 95 (figure 4);

an electroactive material 62 on top of the bottom electrode, the electroactive material constructed such that it has two portions poled in opposite directions (column 3, lines 34-36); and

a top electrode 100 on top of the electroactive material; wherein the electroactive material bends in plane in response to control signals supplied to the bottom electrode and the top electrode.

Regarding claim 8, Kant et al discloses that the electroactive material is constructed from a piezoelectric material (column 3, line 34).

Regarding claim 12, Kant shows that the bending motor has a length to width ratio of at least about ten (figures 3-4).

Regarding claim 13, Kant et al discloses a suspension assembly comprising:

- an actuator arm 16 (figure 1) having a proximal end and a distal end;

- a load beam 18 attached to the distal end of the actuator arm, the load beam having a mounting region 20 at a proximal end, a head suspension near a distal end of the load beam, and a flexible region (shown in figure 2, but not labeled) between the mounting region and the head suspension;

- a flexure 66 (figure 3) configured to support a transducing head;

- a beam 52, 54, connected between the head suspension and the flexure; and

- a bending motor 62, 64 attached to a top surface of the beam such that the beam supports the bending motor and transform a force on the flexure into a compressive load on the bending motor; the bending motor being deformable in response to a control signal applied thereto.

Response to Arguments

3. Applicant's arguments filed 12/11/03 have been fully considered but they are not persuasive.

Applicant asserts in page 15, second paragraph:

"Kant et al. does not disclose a prior art element which substantially performs the stated function of the second element of claim 1, flexibly coupling a stationary region of the load beam to a moving region of the load beam. Kant et al. does not disclose a load beam having a stationary region and a moving region. Load beam 18 is stationary and microactuator 50 is attached to the distal end of the load beam by plate portions 76 and 78. Microactuator 50 include a moving portion, namely beams 52 and 54, to displace the slider. Beams 52 and 54 are part of the microactuator 50, and form part of the unitary structure of the microactuator to connect plate portion 76 and 78 and form aperture 79 therebetween. (See FIGS. 3, col. 2-3, lns. 2:67-3:2). However, beams 52 and 54 do not couple a stationary region of the load beam to a moving region of the load beam, as the load beam of Kant et al. does not include moving region."

The Examiner respectfully points out that the moving region of the load beam in the present Application is the flexure 18 (see figure 2). In the reference to Kant the moving region of the load beam is the flexure 66. It is also noted that the second section of the load beam in the present Application is the flexure 18 (see figure 2).

Applicant asserts in pages 16, last paragraph and page 17, first paragraph:

Kant et al. does not teach, suggest, or disclose the claimed invention recited in claim 2 of the present application. Claim 2 recites a microactuation system including a bending motor attached between the first section of the load beam and the flexure, the bending motor being deformable in response to a control signal applied thereto, and a flexible beam connected between the first section of the load beam and the flexure wherein the bending motor is attached to the flexible beam. Kant et al. does not disclose a flexible beam or bending motor connected between a load beam and a flexure. Rather, Kant et al. teaches load beam 18 with flexure microactuator 50 attached to the distal end of the load beam. The microactuator of Kant et al. includes beams 52, 54 with piezoelectric elements 62, 64 connected thereto to deform a slider carrying portion 66 of the microactuator with respect to plate portions 76, 78 of the microactuator. However, beams 52, 54, and piezoelectric elements 62 and 64 are not connected

Art Unit: 2653

between the load beam and a flexure, but rather form the unitary portion of the flexure microactuator.

The Examiner respectfully points out that in the present Application, the first section 44 of the load beam, bending motor 32 (comprising the piezoelectric elements 54), the bending motor being attached to the flexible beam 48, and the flexure 18 being attached to the flexible beam, are represented in Kant by the first section of the load beam 18, bending motor 62, 64, the bending motor being attached to the flexible beam 52, 54, and the flexure 66 attached to the flexible beam 52, 54 (see figures 2-3 of Kant).

Allowable Subject Matter

4. Claims 13-17 are allowed.
5. Claims 4-5, 9-11, 14-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
6. Upon further consideration the indicated allowability of claim 13 is withdrawn in view of the reference to Kant et al. Rejections based on the cited reference follow.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angel A Castro whose telephone number is 703-308-8435. The examiner can normally be reached on Monday through Thursday, 8 AM to 6 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William R Korzuch can be reached on 703-305-6137. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Angel Castro, Ph.D.